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ABSTRACT

This annotated bibliography seeks to provide an overall view of available curriculum materials for mathematics education for grades kindergarten through twelve. The entries include texts, units of study, and manipulative materials or activity kits. Topics range from standard curricular topics to probability, geometric concepts, games and other enrichment topics or activities. Those entries that have a teacher's edition or manual available are noted. Also identified are those materials that have been used successfully in a classroom situation by mathematics education students at the University of Pennsylvania Graduate School of Education. (JP)

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Bibliography of Mathematics Curricula (K-12)

- Spring 1973 -

by
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SE 017 219

The following is a bibliography of mathematics curriculum materials available through many of the major publishing companies in the United States. Several companies are not included either (a) because they did not respond to our request for communication, or (b) because they produce no texts for grades kindergarten through twelve, but only college texts, mathematics laboratory materials, or mathematical games or puzzles.

Materials are organized according to publishing company in alphabetical order. An asterisk (*) following the bibliography annotation indicates the availability of a teacher edition or manual. A double asterisk (**) preceding the book title indicates that the book has been used successfully in a classroom situation by mathematics education students at the Graduate School of Education.

This annotated bibliography seeks to provide an overall view of the available materials for mathematics education for grades kindergarten through twelve. Additions or corrections are welcomed.

Gail Garber

May 1973

ADDISON-WESLEY

Investigating School Mathematics, 1973, Eicholz, O'Daffer, Fleenor, K-6
Utilizes a five-stage lesson: preparation, investigation, discussion, utilization and extension. This program is also suited for individualization. Supplementary materials available.*

Elementary School Mathematics, 1971, Eicholz, O'Daffer, Martin, K-6
Integrates modern power school techniques with speed skill operations. Concepts introduced in a spiral organization with an emphasis on computational skills. Supplementary materials available.*

Geoboard Kit, four 5 x 5 boards.*

Arithmetic Skill Cards for Development, Practice, and Application, 1972, Fleenor, Eicholz, O'Daffer, Ellis, K-6.
Cards for independent review of basic computational skills.

Developmental Math Cards, Bates, Irwin, Hamilton
Supplements any basal mathematics programs, and includes applications of mathematics through guided experience.

Mathematics Activities Kit, 1972, Knaupp, Bitter
Includes manual and materials such as tangrams, geoboards, rods, cubes, attribute blocks, and balances.

Mathematics for Schools; An Integrated Series, 1970, 1972, Fletcher, Howell, 5-10 years old
Developed in England; influenced by the Nuffield Mathematics Project. Development Proceeds for real situations to discussions to practice activities.*

Madison Project Materials, 1966, Davis, K-6
Develops informal, creative learning experiences.*

Elementary Enrichment Mathematics Series, 1969, Diliberto, Housh, K-6
Program generally for early elementary grades. Involves the child with work on number lines and grids to guide the discovery of relationships about objects.

Experiences with Geometry, 1966, Eicholz, O'Daffer, K-6
Supplements any elementary program. Uses an intuitive basis for work with key ideas in geometry.*

A.S.M.D., 1963, Hancock, Holden, Lucas, O'Brien, Schneider
Four short, programmed texts providing remedial work in whole number operations.*

School Mathematics I & II, 1971, Eicholz, O'Daffer, Brumfiel, Shanks, Fleenor, 7-8
Involves the same philosophy, pedagogy, and presentation style as Elementary School Mathematics. Book I reviews elementary school concepts; Book II presents algebra and algebraic notation. Advanced grade 7 classes can use both books in one year. Supplementary materials available.*

ADDISON-WESLEY (continued)

Success With Mathematics, 1972, Fleenor, O'Daffer, Eicholz, Jr. H.S.
Developed for low achievers. Concepts presented in learning modules, preliminary stage (motivational), structuring stage, practice stage, occasional project cards. Book I presents a background in mathematics. Book II deals primarily with applications. Supplementary materials available.*

Individualizing Mathematics, 1970, Foley, Basten, Bower, Jacobs, Burke, Smith, 7-9
Non-graded texts. Basal program in a four-part sequence: motivational strand, mainstream strand, in-depth topics strand, testing program.*

Mathematics, A Modern Approach, First Course & Second Course, Revised Edition, 1971, Wilcox, 7-8
Two year math sequence. First course prepares the student for algebra. The second course covers a minimal algebra program and prepares the student for a nonrigorous geometry course, including flowcharting, number bases, trigonometry and vectors.*

Modern General Mathematics, 1969, Eicholz, O'Daffer, 6-9
Sixth grade level. Written to interest older students in need of remedial work. Allow for development of computational skills.*

Mathematics With Business Applications, 1969, Skeen, Wheeler, Johnson, 9-12
For terminal H.S. students introduced to basic algebra concepts. Written on the level of a typical general mathematics course. Stresses computational skills and mathematics applications to business and consumer situations.*

Basic Mathematics: A Problem-Solving Approach, 1963, O'Malley, 7-12
Five programmed texts for the slower student with an emphasis on understanding concepts. Includes fundamental arithmetic ideas and computation.*

Enrichment Topics in Basic Mathematics, 1964, O'Malley, 9-12
Extension of Basic Mathematics by O'Malley. Covers geometry, graphing, trigonometry, squares and square roots, statistics, probability, and number bases.*

Algebra, Second Edition, 1971 and Algebra and Trigonometry, Second Edition, 1971, Johnson, Lindsey, Slesnick, Bates
Generally for the college-bound student. Algebra relates the structure of the real number system and algebraic skills. Algebra and Trigonometry introduces complex number systems and elementary functions.*

Algebra: Individual Resource Units, 1971, Johnson, Linsey, Slesnic, 10-12
Five paperback extracts from Algebra, Second Edition. Good for enrichment or review.

Algebra: A Modern Introduction, 1973, Keedy, Bittinger
Twelve booklets. In sequence it develops a two-year algebra course. Teacher can design an arithmetic course, or an arithmetic course with

ADDISON-WESLEY (continued)

quadratics depending on the books utilized. Behavioral objectives are written in the margins. Emphasis is on applied algebraic problems.*

Geometry, Second Edition, 1971, Moise, Downs
Incorporates recommendations of SMSG and CEEB. Introduces metric postulates.*

Geometry, A Modern Approach, 1968, Wilcox, 9-12
For the average geometry student. Provisions made to "teach up" to a high class. Integrates plane and space geometry. More difficult proofs are postulated. Supplementary materials available.*

An Introduction To Transformational Geometry, 1971, Eccles, 9-12
First discusses basic transformations introduced to modern geometric concepts which blend algebra, traditional geometry, coordinate geometry and function theory.

Precalculus Mathematics, Second Edition, 1972, Shanks, Brumfiel, Fleenor, Eicholz
Part I involves functions and probability with an emphasis on graphing functions, reading graphs, and computational skills. Functions also stressed. Part II involves analytic geometry with vectors with an emphasis on graphic techniques and physical applications accompanying the concepts.*

Elements of Calculus and Analytic Geometry, Second Edition, 1972, Thomas, 11-12
High school edition for the Thomas Calculus College Text. Special attention paid to problems giving a broad variety of experience. Includes functions, limits, integration, derivatives, hyperbolic functions, infinite series, analytic geometry in Cartesian and polar coordinates.*

Trigonometry, Second Edition, 1969, Vance, 11-12
Stresses analytic and computational aspects of trigonometry. Emphasis on graphing, applications of circular functions, and general inverse function concepts.*

Plane Trigonometry, Second Edition, 1964, Spitzbart, Bardell, 11-12
Plane trigonometry as a study of functions.

Modern Algebra and Trigonometry, Second Edition, 1968, Vance 11-12
Studies the nature of mathematics as a logical system. A one or two semester course.*

Analytic Geometry, 1966, Pratter, Morrey, 12
Preparation for calculus, emphasizing theory. Analytic geometry is developed by coordinates. Includes an introduction to sets, inverse functions, and relations.

Analytic Geometry, Third Edition, 1967, Fuller, 12
Preparation for calculus, slighting some traditional topics to introduce more topics of use to the future calculus student.

ADDISON-WESLEY (continued)

Analytic and Vector Geometry: A Bridge to Calculus, 1969, Eccles, Vance, Mikula

Includes a variety of one-semester courses for he precalculus student. Includes analytic geometry, vector geometry, sequences, tangents, area functions, and plane transformations.

Probability: A First Course, Second Edition, 1970, Mostellar, Rourke, Thomas, 11-12

A one-semester H.S. course for students with at least two years of general math and an introduction to geometry. Follows recommendations of CEEB and Commission on Mathematics.

Probability With Statistical Applications, Second Edition, 1970, Mostellar, Rourke, Thomas, 11-12

Student should already have two years of high school algebra. Includes random fluctuation, regularities, applications of probabilistic math models, use of math models to interpret and predict experimental results.

An Introduction to Computers and Problem Solving, 1969, Hull, Day, 9-12

Explains the function of computers on an elementary level. Solves a wide variety of problems using FORTRAN.*

Computer Methods in Mathematics, 1969, Albrecht, Lindberg, Mara, 10-12

Teaches writing in a time-sharing system and how to use programs to solve math problems from the regular curriculum. Includes BASIC and FORTRAN and assumes the student has had one year of H.S. algebra.

Basic FORTRAN IV Programming: Self-Instructional Manual and Text, 1968, Healy,

Introduces the student to the capabilities of computers and computer programming. Assumes a prerequisite of H.S. algebra.

FORTRAN IV Primer, 1966, Organick

Treats introductory concepts of computers, construction of algorithms using flow charts. The student is guided around many of the details during the initial study.

An Introduction to "BASIC", A Time-Sharing Language, 1971, Lindahl, 10-12

Prerequisite: H.S. algebra. Stresses BASIC language itself and the general concepts of computer programming. Includes techniques to enter, modify, and execute programs.

The Computer, An Everyday Machine, 1972, Squire, 10-12

General introduction to data processing. Emphasis on the problem solving process. Occasional projects.*

Programmed Basic Algebra, 1971, Beck, Trier, 10-12

Programmed approach to intermediate algebra with exercises throughout. Summary text available.

ADDISON-WESLEY (continued)

Introduction to Technical Mathematics, 1969, Washington, 9-12
For H.S. technical and pretechnical curricula. Through arithmetic reviews, the book introduces algebraic, geometric and trigonometric concepts. Basic teaching involves examples and problems.

Mathematics in the Modern World, 1973, Triola
For non-math oriented college bound students. Blends history, mathematics and applications including logic, mathematical systems, algebra, calculus, probability and statistics, computers, and mathematics in other fields.*

AMERICAN BOOK COMPANY

Mathematics In Action, Kane, Oesterle, Deans, McMeen, Beigel, Evans, Teyfar, Goodfellow, Jackson, non-graded series levels 1-8

More gradual pace than most modern mathematics elementary programs; more drills. Nonverbal dialogue guides student discovery. Follows NCTM recommendations. Basically concerned with addition, subtraction, multiplication and division of whole and rational numbers.*

Fundamentals of Algebra: A Simplified Approach, Peters, Schaof, 8-12

Basically a self-teaching text with short learning segments. Reviews the basic arithmetic skills and covers first year algebra. Reading level is below the grade level.*

Fundamentals of Geometry: A Simplified Approach, Peters, Schaof, Calloway, 9-12

Covers a standard course using modern terminology and symbolism. Uses algebraic methods to simplify proofs. Introduces space geometry. Reading level of the average student.*

CONTINENTAL PRESS

Modern Mathematics, Filano, K-8
Develops proficiency in new concepts and traditional operations. Emphasis on vocabulary and the discovery approach.*

Learning New Skills in Mathematics, 7-8
Transitional for liquid duplicating.*

Junior High Arithmetic, Traditional Approach, 7-8
For liquid duplicating.*

A New Look at Decimals and A New Look at Percentage, 7-12
Ungraded at the secondary level. For liquid duplicating.*

Arithmetic and mathematics workbooks available.

CUISENAIRE

Using the Cuisenaire Rods, A Photo/Text Guide, Davidson, 1-9
Includes the study of relationships, addition and subtraction of whole numbers, factors and prime factorization, fractions, division of whole numbers, ratio and proportion, measurement, sets, signed numbers, introduction to algebra, word problems, inequalities, and permutations.

Opening Doors in Mathematics, Genise, Kunz, K-2
Combines use of Cuisenaire rods with worksheets and activities with an emphasis on manipulative models. Introduces addition, multiplication, and inverse operations.*

Modern Mathematics Made Meaningful, Kunz, K-8
Study kit for remedial or tutorial work in grades 1-3. Introduces concepts, terminology, and techniques of modern and traditional mathematics. Includes 50 topic cards.

Student Activity Cards for Cuisenaire Rods, Davidson, Fair, Galton, K-8
Games and challenging activities.

Rods, squares and cubes available. Also games, films, and supplementary materials available.

Topics from Mathematics
Cubes, Fielker, Encourages construction of paper models. Studies measurement (perimeter, surface area, and cube volume). Introduces symmetry.
Statistics, Fielker, Fundamentals of statistics as a science.
Circles, Mold.
Towards Probability, Fielker, Experiments introducing probability.
Tessellations, Mold, Relates mathematics and art through the use of translation and rotation.
Solid Models, Mold, Instructions to build the five platonic solids.
Computers, Fielker, Introduction to coding systems.
Triangles, Mold, Investigates triangles through geoboards, paperfolding, and drawings.

SMP - School Mathematics Project, K-6
Developed in England, the project prepares the student for secondary mathematics through problems from everyday experiences. Emphasizes student participation through games, puzzles, and math problems. Reading is at a minimum, and opportunities encourage discovery learning.*

Cosmic Views: The Universe in Forty Jumps
Graphic journey of numbers from the edge of infinity to the nucleus of the atom.

Mathematics: Illustrated Dictionary
Cover 200 old and new terms in simple language. Illustrated.

ELECTRIC LEARNING, INC.

Individualized Learning, 3-8

Tapes accompanied with work-study guides. Taped directions and explanations keep reading at a minimum. Tape time: 8-26 minutes.*

GINN AND COMPANY

Ginn Elementary Mathematics, Scott, Immerzel, Wiederanders, MacPherson, Moulton, Ames, K-8

Uses several learning strategies for guided discovery. Fellows behavioral objectives. Low reading requirements and involves computation through applications. Supplementary materials available.*

**Essentials of Mathematics, Skills and Concepts, Sobel, Maletsky, Hill, 1-4

Pictorial explanations of geometry, algebra, and arithmetic. Involves simple discovery and minimized abstractions with the reading level two grades below the text level. Projects included. Supplementary materials available.*

HARCOURT, BRACE, JOVANOVICH, INC.

Harbrace Mathematics, 1972, Payne, Beatty, Dominy, May, Spooner, Wells, K-8
Concepts introduced informally through activities and games. Uses guided discovery with an emphasis on mastering fundamental skills and problem-solving abilities. Supplementary materials available.*

Elementary Mathematics Series, Second Edition, 1968, Payne, Wells, Spooner, May, K-8
Incorporates the fundamentals of arithmetic.

Improving Your Ability in Mathematics, 1972, Eberhart, Payne, 3-8
Four supplementary programs for individualized, self-directed instruction. Test-teach-test approach.

Supercube, May, 3-8
Self-contained with 80 activities exploring basic concepts in geometry, topology, computers, probability, and other areas of mathematics.

Individualized Mathematics Skill Builder, 1970, Schultz, 2-8
Cassette recorded paced drills for individual speeds. Units include three sessions of 14-20 minutes. The program can also be purchased as three LP albums.

Exploring Sets, Geometry and Numeration Series, 1969, Spooner, 3-9
Supplementary enrichment program.

Key Ideas in Mathematics 1 and 2, 1971, Gerardi, Foster, Jones, 7-8
Guided discussion question. Minimal amount of reading.*

Sequential Mathematics, 1973, Allegra
For special students with poor reading and writing skills and perceptual difficulties. Designed to isolate and eliminate causes of computational error. Covers addition, subtraction, multiplication and division.*

Algebra One, Second Edition, 1972, Payne, Lankford, Ulrich, Zamboni, 9
Introduces proof and the structure of the real number system. Uses geometric models to clarify algebraic concepts. Supplementary materials available.*

Geometry: Second Edition, 1972, Payne, Lankford, Ulrich, Zamboni, 10
Develops proof and the use of logic. Includes transformational geometry, coordinate geometry, relations and functions.*

Algebra Two With Trigonometry, Second Edition, 1972, Payne, Lankford, Ulrich, Zamboni, 11
Reviews algebra I. Introduces proofs and the complex number system. Includes coordinate geometry in two and three dimensions, trigonometry, matrices, probability, induction and linear programming.*

Advanced Mathematics: A Preparation for Calculus, 1972, Payne, Lankford, Ulrich, Zamboni, 12
Preparation for college math. Discusses trigonometry, analytic geometry, introductory calculus, vectors, matrices, and introduces limit concept.*

HARCOURT, BRACE, JOVANOVICH, INC. (continued)

Discovering Geometry, 1972, Jacobs, Meyer
Informal approach aimed to non-math oriented college bound students. Reading at a minimum. Includes transformational geometry.

Introductory Algebra 1 & 2: Second Edition, 1973, Jacobs
Covers first year algebra in two years, with additional reinforcement in mathematical skills. Uses guided discovery.*

Mathematics 1 & 2: Discovery and Practice, 1971, Jacobs, Meyer, 9-12
For lower track HS students. Reading at a minimum. Reviews the basics of geometry, algebra, and trigonometry.*

Consumer Mathematics, 1971, Lankford, Goe, 9-12
Develops ability to analyze and solve consumer problems mathematically.

Numbers and Operations, 1970, Lankford, Heikkinen, Silvey, 7-12
General mathematics program to master computation. Shows a variety of ways to add, subtract, multiply, and divide. Each method is sequentially developed in easy exercises interrelated with other methods, and verbal problems.*

Essential Mathematics: Second Edition, 1967, Lankford, Ulrich, 9-12
For general mathematics students. Emphasizes operations with whole numbers, fractions, decimals and percents. Includes consumer economics, and basic ideas of geometry, algebra, and trigonometry.*

Learning to Compute: Third Edition, 1973, Jones, 6-12
Diagnostic and remedial work in workbook form. Includes word problems and flow charts.

HARPER AND ROW, PUBLISHERS

New Dimensions in Mathematics, K-6
Reading at a minimum. Reviews basic facts. Develops basic concepts through multiple methods incorporating a spiral approach. Drill insures computational speed. Dual-track problems included. Supplementary materials available.*

**UICSM, 1963-1967, 7-8
For the student who doesn't do well in mathematics. The program uses discovery learning in an activity-centered approach, emphasizing fractions, decimals, percents and fundamentals of Euclidean geometry useful in daily living. The language is simple and learning progression is gradual. Four books per grade. Grade 7 involves Stretchers and Shrinkers; Grade 8 involves Motion Geometry.*

D. C. HEATH AND COMPANY

Edge Two, 1971, K-1
Teaches mathematical concepts through skills and ecological concepts. Directs participation and develops an understanding of concepts and shapes, grouping sets, reading numerals, and solving two-number addition and subtraction problems. Supplementary materials included.*

Heath Mathematics Program
Heath Elementary Mathematics, 1972, Dilley, Rucker, Jackson, 1-6
Heath Mathematics, 1973, Rising Smith, 7-8
Teaches mathematics applicable to world situations. Creativity and drill gained from activities, games and open-ended activities. Diagrams minimize reading. Uses UICSM recommendations and behavioral objectives. Grade 7-8 furnish a groundwork for algebra and geometry.*

New Ways in Numbers, A Modern Mathematics Program, Second Edition, 1969, Hatze, Horrigan, Smith, 1-8
Paperbound text workbooks using discovery method and application. Includes sets, inequalities and equations, properties of operations, numeration and modular systems, coordinate geometry, and statistics.*

Practice in Mathematics, A Series of Duplicating Masters, 1969, Smith, K-8
Supplements any mathematics program. The nine books and 48 duplicating masters provide extensive practice and help diagnose individual weakness.

Programmed Modern Arithmetic, 1965, Fitzgerald, Starr, 4-6
Four auto-instructional booklets. Introduces logic, sets, set relations, and operations.*

Mathematics: Modern Concepts and Skills, 1969, Dilley, Rucker, 7-9
Simple vocabulary for slow learners. Emphasis basic computational skills with concepts of geometry and measurement.*

Algebra I: A Modern Course, 1970, Beberman, Wolfe, Zwoyer, 9
Explore properties and uses of the real number system, using the discovery method.*

Algebra II with Trigonometry: A Modern Course, 1970, Beberman, Wolfe, Zwoyer, 10-11
Uses simple language and the spiral approach to study a variety of elementary functions.*

Geometry: A Modern Course, 1971, Beberman, Dennis, Wolfe, Zwoyer, 10
Prerequisite is algebra one. Uses deductive reasoning through exploration exercises to develop the fundamental properties of plane and solid Euclidean geometry, isometries, and symmetry. For the average student.*

Mathematics In Daily Use, Fourth Edition, 1966, Hart, Schult, Irvin, 9-10
Terminal text for general mathematics students that stresses concepts, principles, and arithmetic processes.*

D. C. HEATH AND COMPANY (continued)

Elementary Mathematics Analysis, Second Edition, 1967, Harberg, Bristol, 12
For the accelerated HS student. Covers analytic trigonometry and an introduction to calculus, stressing the concept of function.*

Trigonometry for Secondary Schools, Third Edition, 1967, Butler, Wren, 12
Emphasizes structural and analytical aspects of trigonometry. Also develops computational aspects. Treats inverse functions and graphs, wrapping function, complex numbers, and vectors.*

High School Mathematics Series, 1970, Beberman, Vaughan, 8-12
Four courses based on UICSM discovery, applications and precise use of language and symbolism.*

An Introduction to Sets, Probability and Hypothesis Testing, 1964, Fehr, Bunt, Grossman, 12
One semester course in probability theory and applications to hypothesis testing.*

HOLT, RINEHART, WINSTON

Exploring Elementary Mathematics, 1970, Keedy, Dwight, Nelson, Schluep, Anderson, K-6

Emphasizes basic arithmetic facts with computational and problem-solving skills for the average student. Uses an exploratory approach. Supplementary materials available*

Exploring Modern Mathematics, Third Edition, Book I & II, Keedy, Johnson, Smith, Jameson, 7-8

Incorporates new math with the traditional Jr. HS requirements. Uses an exploratory approach and a minimum of terminology. Reviews basic algorithms of whole numbers, fractions, decimals and percents. Uses flow charts; introduces metric and non-metric geometry as a preparation for algebra. Transparencies available.*

Happy Ways to Numbers, 1967, Ambrose, Readiness Text

Develops skills and concepts from concrete experiences relating to the whole numbers zero through nine. Presents equivalence sets, numerals, ordering, and other workbook activities.*

Developing Pre-Number Ideas, 1965, Lucas Neufeld, K

Text workbook to gain an understanding of whole numbers one through nine through manipulation, classification, and ordering of sets.*

Elementary Mathematics: Patterns and Structure, 1968, 1-8

Provides the essential of a pre-HS math program through the emphasis on structure and patterns in arithmetic and the development of basic geometry topics. Eight book program. For accelerated students the last four books are incorporated in a three-book program. Transparencies available.*

Trouble-Shooting Mathematics Skills, Revised, 1969, Bernstein, Wells, 7-12

Remedial program emphasizes techniques of problem solving, mental arithmetic, and estimating reasonable answers. Includes a modern and traditional treatment of fundamental skills.*

Consumer Related Mathematics: A Business Approach, 1971, Kravitz, Brant, 9-12

Uses modern math to develop fundamental arithmetic concepts and skills for the student planning to enter the business world after graduation. Narrative style. Workbook available.*

Foundations of Mathematics, Revised, 1968, Weibe, 9-12

Approaches problem-solving through concepts of sets, number lines, and numeration systems in other bases. Workbook available.*

Explorations in Mathematics, 1970, Weibe, Goodfellow, 9-12

Discovers the need for mathematics in the world (of the general math student) through experiments and illustrations. Builds mathematical phrases step-by-step. Examines basic operations through flow-charting.*

HOLT, RINEHART, WINSTON (continued)

Problem Solving Mathematics, Book I & II, 1972, Kinney, Ruble, Brown, 9-12
Relates mathematics to personal, vocational, and community experiences. Teaches systematic procedures for solving problems, accurate computation, mathematical language.*

Pre-Algebra Mathematics, Revised, 1970, Nichols, 7-12
Emphasizes maintenance and development of computational skills and concepts for solving problems.*

Modern Elementary Algebra, Third Edition, 1969, Nichols, 9-10
Uses guided discovery to build knowledge of mathematical concepts and solving equations and inequalities.*

Modern Intermediate Algebra, Revised, 1969, Nichols, Heimer, Garland, 10-12
Develops the concept of functions. Introduces coordinate geometry, trigonometry, logarithm and exponential equations, permutations, combinations, probability and vectors.*

A Program in Contemporary Algebra, Revised, 1970, Heimer, Koeher, Lottes, 9-12
Five programmed booklets for an accelerated or remedial course.*

Algebra and Trigonometry, 1967, Keedy, Griswold, Schacht, Mamary, 10-12
Treats ploynomial, circular, exponential and logarithmic functions.*

Modern Geometry, 1968, Nichols, Palmer, Schacht, 10-12
Stresses set language and algebraic properties applied to geometric situations. Integrates plane, solid, and coordinate geometry.

Modern Trigonometry, 1968, Nichols, Garland, 11-12
Reviews basic mathematics concepts and studies trigonometry based on the wrapping function. Includes analytic aspects of trigonometry.*

Analytic Geometry, 1973, Nichols, Kalin, 12
Emphasizes vectors. Provides an introduction for more abstract linear algebra.

Calculus - Analytic Geometry - Elementary Functions, 1973, Shanks, Gambill, 12
Combined analytic geometry and calculus course. Also covers vectors, algebra, trigonometric and exponential functions. The calculus is problem-oriented.*

Individualized Study Units in Arithmetic, 1970, Simon, 3-12
Eight units covering addition, subtraction, multiplication and division of whole numbers, fractions, decimals and percent.

Mathematical games, kits, and films are also available.

HOUGHTON - MIFFLIN

Modern Math Series, Gleason, Meder, K-12
Reflects S.M.S.G. and Committee on Mathematics of C.E.E.B. recommendations.

Modern School Mathematics; Structure and Use, Duncan, Capps, Dolciani, Quast, Zweng, K-6
Involves discovery and individual learning patterns, developing concepts from the concrete to the abstract. Drill reinforces concepts and develops skills. Supplementary materials available.*

Mathematics for Individual Achievement, Denholm, Hankins, Herrick, Vojtko, K-6
This alternate instructional program concentrates on a core of basic skills for the middle range pupil. Artwork incorporates mathematics with real objects.

Mathematics in the Making, Bell, Long, Hides, Campbell, 3-8
A set of twelve books oriented to laboratory enrichment activities. Answers are provided and reading level is controlled. Work can be independent, small group, or entire class oriented.

What is a Computer?, Ball, 6-8
Introduces computer operations and flowcharting.

Structural Arithmetic, Stern, Stein, Gould, K-3
Use of manipulative devices to visualize abstract number concepts.

Modern Mathematics Series, 7-12
Language geared to the secondary school student. Reflects S.M.S.G. recommendations. Includes the following 30 materials.

Modern School Mathematics: Structure and Use, Duncan, Cole, Scrivens, Sparks, 7-8
Uses an intuitive approach to informal geometry with an emphasis on comprehensive review.*

Modern School Mathematics: Structure and Method, Courses 1 & 2, Dolciani, Wooton, Beckenbach, Chinn, Markert, 7-8
Emphasis on the structure of the number system with concentration on computational skills. Includes a chapter on number theory, graphing, sets, percents, and mathematical examples in one, two, and three dimensions. Overhead visuals available.*

Modern School Mathematics; Pre-Algebra, 1973, Dolciani, Wooton, Beckenbach, Feldman, Chinn, Markert, 7-9
Includes arithmetic algorithms, fundamental geometric concepts, rational and real number system concepts, metric system topics, and the study of relations and functions through graphing.

Elementary Algebra, Parts 1 & 2, Denholm, Dolciani, Cunningham, 8-10
A two year, two book sequence for the student who need more practice. Includes chapters on geometry.*

HOUGHTON - MIFFLIN (continued)

Modern School Mathematics: Algebra I, 1970, Dolciani, Wooton, Beckenbach, Jurgenson, Donnelly, 8-10

Stresses the structure of algebra with an emphasis on algebraic proof. Functions are presented as sets of ordered pairs and as mappings. Includes three levels of problem solving, elementary logic, three-variable sentences, graphs, statistics and probability, and digital computer methods.*

Individualized Instruction Program for Modern School Mathematics: Algebra I, Algebra II, and Trigonometry, 1970

Cannot be used alone, but accompanies the regular text. Assists the teacher in using supplementary materials.

Practice Tapes for Modern School Mathematics: Algebra I, Hurst

Two lesson booklets and 27 tapes 8-12 minutes long.

Modern School Mathematics: Algebra and Trigonometry 2, 1971, Dolciani, Wooton, Beckenbech, Sharron, 10-12

Begins with a cumulative review. Inequalities and equations are given parallel treatment throughout. Concepts are introduced through rational numbers, and are then developed to include the irrational numbers. Five chapters cover many analytic aspects and practical applications of trigonometry. A self-study workbook is available.*

Modern Algebra: Structure and Method, Book 1,1973, Dolciani, Wooton, 10-12

Uses a spiral method to develop the tradtitional basic principles. Deductive reasoning is included.*

Individualized Instruction Program for Modern Algebra: Structure and Method; Books 1 & 2, Smith

Supplements the text. Behavioral objectives included.

Individualized Course, Modern Algebra: Structure and Method, Book 1, 1973, Dolciani, Wooton, Gierl, Guldberg, Reinke, Whitehouse

Self-instructional for one person, a small group, or an entire class. May be used concurrently with the basal text. Included are behavioral objectives, pre-tests, and post-tests. Flow charts appear between the lessons. Visuals are also available.

Modern Algebra and Trigonometry: Structure and Method, Book 2, 1973, Sorgenfrey, Wooton, Dolciani, 11-12

A less demanding text with respect to proofs and reading requirements. A complete basic trigonometry course is provided within three chapters. Includes enrichment materials such as computer explorations and mathematics applied to vocations.*

**Modern Algebra and Trigonometry: Structure and Method, Book 2, 1973, Dolciani, Berman, Wooton, 11-12

Emphasizes structure and deductive proof. Includes a review, and an introduction to complex numbers. Relations and functions are used throughout.

HOUGHTON - MIFFLIN (continued)

Modern Basic Geometry, 1973, Jurgenson, Maier, Donnelly, 9-12
Less reading matter for average ability students. Proofs are guided and students are expected to complete the incomplete proofs.*

** Modern School Mathematics: Geometry, 1972, Jurgenson, Donnelly, Dolciani, 9-12
Algebra and geometry are integrated. Language is precise and drawings are clear. Induction and intuition are included. Plane geometry is extended to solid geometry throughout. Deductive proofs are developed through postulates, definitions, and theorems.*

Individualized Instruction Program for Modern School Mathematics: Geometry, Smith
Designed to cover major concepts and skills in leveled categories. Accompanies the basal text. Behavioral objectives are listed. Visuals are also available.

School Mathematics Geometry, 1973, Anderson, Garon, Gremillion, 9-12
Unifies plane and space geometry in an amplified S.M.S.G. geometry text. Discusses functions and vectors. Visuals also available.*

Modern Coordinate Geometry, A Wesleyan Experimental Curricular Study, 1969, 9-12
Algebra and geometry are integrated to help prove traditional geometry theorems. Exploratory exercises encourage the student to investigate concepts before they are formally introduced.

Geometry, Plane - Solid - Coordinate, 1968, Morgan, Zartman, 9-12
Plane geometry is followed in each chapter by similar concepts is solid or coordinate geometry. The emphasis is on structure.*

Modern Trigonometry, 1973, Wooton, Beckenbach, Buchanan, Dolciani, 11-12
Explicitly relates trigonometric and circular functions. Discusses vectors and then proceeds with complex numbers.*

Modern Introductory Analysis, 1970, Dolciani, Beckenbach, Jurgenson, Donnelly, Wooton, 11-12
A pre-calculus study of mathematics with an emphasis on the study of functions.*

Modern Analytic Geometry, 1972, Wooton, Beckenbach, Fleming, 11-12
Two and three dimensional geometry developed from a Cartesian and vector viewpoint. The student should already have two years of algebra and trigonometry.*

Introductory Statistics and Probability, A Basis for Decision Making, 1971, Blakeslee, Chinn, 11-12
Prerequisite: two years of algebra. Generally intuitive.*

Analysis of Elementary Functions, 1970, Sorgenfrey, Beckenbach, 11-12
Prerequisite: two years of algebra and geometry. Uses many basic ideas of differential and integral calculus throughout.*

HOUGHTON - MIFFLIN (continued)

Limits: A Transition to Calculus, 1970, Buchanan
Prepares the pupil for calculus. Includes inequalities, upper and lower bounds, absolute value, graphing, and limits.

Flow Charting, 1970, Mc Quigg, Varness, 6-9
A Junior High School workbook.

Introduction to Computer Programming, 1969, Crawford, Capp, 9-12
Student should have taken a course in elementary algebra, and need not have access to an actual computer.

A Guided Tour to Computer Programming in BASIC, 1973, Dwyer, Kaufman, 7-12
Clearly presents elementary statements and commands of programming.

Contemporary School Mathematics Series, Matthews, 9-12
A two-level sequential series of paperback books including sets and logic, matrices, computers, and relationships between shapes, sizes, and places.

Houghton - Mifflin Mathematics Enrichment Series, Meder, 7-12
Adds depth, scope, and flexibility to any modern mathematics program.

Experiments in Mathematics, Stage 1,2,& 3, Pearcy, Lewis, 6-9
A laboratory approach to learning mathematics.

Modern Basic Mathematics, 1972, Hyman, Sokol, Spreckelmeyer, 9-12
Arithmetic and basic geometry for the non-academic student.*

Modern Applied Mathematics, 1971, Gold, Carlberg, 9-12
A minimum amount of reading for the vocationally oriented student. Included are arithmetic, measurement, geometry, construction, and the use of formulas with respect to right-triangle trigonometry, ratio and proportion, percent, and graphical data.*

Patterns in Mathematics, 1970, Edmonds, Graham, Linn, 7-12
A minimal amount of reading in this general mathematics or pre-algebra text. Uses the inductive approach.*

General Mathematics for the Shop, Nelson, Moore, Hamburger, 9-12
Explains and applies the fundamentals of arithmetic, algebra, and geometry.*

Modern Mathematics for Achievement, First and Second Courses, 1972, Herrick, Zartman, Conrow, 7-12
Uses the inductive approach with a minimal amount of reading for low achievers with an emphasis on practical concepts and skills.*

Individualized Instruction in Mathematics: Activity Cards, Wagner, Cole, Scrivens, Herrick
Emphasizes the basic operations.

HOUGHTON - MIFFLIN (continued)

Programmed Units in Mathematics, Work, Mixture, and Motion Problems
Teaches the skills necessary for translating specific types of problems into algebra statements.

I.C.S.P.- Individualized Computational Skills Program, Shaw, Hiehle, 1-9
A supplementary program for the student weak in arithmetic skills. Includes a computation test, arithmetic skills inventory, drill and practice sheets, and teaching models.

INDEPENDENT SCHOOL PRESS

Individualized Mathematics, Reeby, 6-9
Self-learning packet includes objectives, self-tests, post-tests, and answer keys.

Exercises in Pre-Algebra, Butler, 6-8
Diagnostic tests drawn from author experience and NAIS exams.

Exercises in Elementary Algebra, Lux, Pieters
To be used with any basic text. Includes oral and review exercises, modern and traditional topics.

Relevant Mathematics I, II & III, Stone, Becker, 8-12
Covers modern and traditional secondary school mathematics curricula topics. Answer keys available.

INSTITUTE OF LIFE INSURANCE

**Sets, Probability and Statistics, 10
Includes sets, sample spaces, probability and statistics, mortality tables, compound interest premium calculations, and uses of life insurance. Includes problems and experiments.*

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The Understanding Mathematics Program, Grundlack, Buffie, Denny, Kempf, Nesbit, Pearson, Wallen, K-8
Emphasis on understanding and mastery of computational skills and development of mathematical concepts. Inductive lessons and reinforcement activities included. Each lesson is a complete instructional unit with no grade designations. Geometry is introduced.*

Spectrum Mathematics Series, France, Clark, 3-8
Non-graded for students who need help with basic concepts and skills of computational reasoning. Includes pretest, developmental exercises, applications and evaluations.

Introduction to High School Mathematics, Brown, Snader, Simon, 9-12
Helps develop mathematical reasoning, principles, and processes. Includes geometry and probability and provides a good background for algebra.

Applying High School Mathematics, Brown, Simon, Snader
Presents a practical reason for studying mathematics. Uses a developmental approach.

Algebra I - Theory and Application and Algebra II and Trigonometry - Theory and Applications
Sixty visual transparencies each to supplement any algebra program.

Exploring the Metric System, Kempf, Richards, 4-6
Applies the metric system to everyday measurement.

Using the Metric System, Kempf, Richard, 7-12
Pupils encouraged to think in metric terms. Also good for additional practice or individual enrichment.

Geometry - Theory and Application, Fitzgerald, Lindblom, Zetterberg, Dalton
Uses guided discovery to clarify math theory and emphasize practical applications. Follows recommendations of current trends in mathematics education.*

**Geometry - A Transformational Approach, Coxford, Uriskin, 9-12
For the average student. Simplifies Euclidean geometry through the use of transformations. Provides excellent background for future work in algebra.*

Students Glossary of Arithmetical - Mathematical Terms

MACMILLAN PUBLISHING COMPANY, INC.

MacMillan School Mathematics Programming, Developing Mathematics Series, 1970-1973, Phillips, Thoburn, Sanders, Fitzgerald, K-8

Informal development of concepts through involvement. Includes drills. Three levels (minimum, average, maximum). Supplementary materials available.*

From Arithmetic to Algebra, 1970, Lay

Prealgebra arithmetic course. Introduces the beginning notions of algebra.*

Understanding Modern Mathematics, Dausch, Maskowitz, Ranucci, Seltzer, Zoll, 7-12

Follows recommendations of SMSC and UICSM. Includes 400-500 instructional frames plus exercises and discussion questions.*

The Papy Minicomputer, 1970, Papy, K-3

Manipulative device gives one an understanding of addition, subtraction, multiplication, division of whole and decimal numbers. Introduces place value and basic calculation.*

MacMillan Modern Mathematics Series, 1967-1972, Johnson, Kinsella, Rosenberg, Reckzeh, 9-11

Chapters begin with an orientation. Minimal readability. Includes graded exercises, marginal annotations, and discovery questions. Final chapter is a comprehensive review.

Algebra: Its Structure and Applications reviews modern, basic, mathematics. Geometry: A Dimensional Approach develops line, plane, and space geometry. Algebra and Trigonometry extends concepts earlier developed.*

MacMillan Mathematics Program, Drooyan, Hadel, Carico, Hyatt, Hardesty, 9-11

Important concepts explicitly identified as definitions, axioms and theorems. Cross-referencing occurs within the texts. Includes Algebra I, Geometry, Algebra II with Trigonometry.*

Modern Mathematics, Volumes I & II, 1968-1969, Papy

American edition of a French text. Uses discovery and axiomatic approaches and presents graphic presentations of mathematical concepts and skills. Volume I develops sets and simple algebra. Volume II constructs real numbers by the binary system of numeration and then by the decimal.

MacMillan Mathematics Supplements, 1970, Pasamentier, Salkind, Stepelman

Closely related to a standard curriculum. Can be individualized. Challenging Problems in Algebra Volume I & II parallels first and second algebra courses. Challenging Problems in Geometry Volume I & II parallels a geometry course and includes more advanced topics. Milestones in Geometry develops several major geometric themes in their historical setting.

A Vector Approach to Euclidean Geometry, 1971, 1973, Vaughan, Szabo, 10-11

Two year, two volume geometry course under UICSM recommendations. Vector approach achieves geometric results and enriches algebraic concepts.*

MACMILLAN PUBLISHING COMPANY, INC. (continued)

Fields and Functions: A Course in Precalculus Mathematics, 1970, Bedford, Hammond, Best, Lux, 12
Uses formal and informal methods concentrating on the algebra of real numbers and the study of elementary functions. Final chapter on complex numbers.*

Trigonometry: An Analytic Approach, 1967, Drooyan, Hadel
Modern Presentation of topics important for students planning to continue in mathematics.*

Analytic Geometry: A Precalculus Approach, 1970, Bohuslov, 9-12
Isolates and then combines concepts of basic mathematical analysis essential to study calculus.

Analytic Geometry and The Calculus, Second Edition, 1969, Goodman
Beginning calculus text including matrices and linear algebra.

Basic Mathematics with Electronic Applications, 1972, Smith, Burton
Integrates mathematical principles and electronic applications. Requires a minimal mathematics background.*

Introductory Mathematics for Technicians, 1972, Auerbach, Groza
Follows the recommendations of the Michigan study. Covers a broad selection of topics and applications.

Essentials of Trigonometry, 1971, Drooyan, Hadel, Carico
Can complete a mathematics program or prepare the student for college mathematics. Emphasis on periodic properties of trigonometric and circular functions.

Descriptive Geometry, Fourth Edition, 1971, Pare, Loving Hill
Follows traditional course outline including orthographic projection, intersections of planes and planes with solid conics. Employs the decimal system of dimensioning.

Basic Technological Mathematics, 1969, Crooks, Hancock, 9-12
For the technical, vocational or shop student. Emphasizes skills of manipulating formulas in solving problems relevant to the students' job. For poorly motivated or slower student.*

Trigonometry: An Analytic Approach, Second Edition, 1973, Drooyan, Hadel, Carico, 11-12
Balance between theory and applications. Emphasizes topics of interest to students who plan to specialize in math-related fields. Includes complex numbers, and geometric vectors.

Elementary Functions: Backdrop for the Calculus, 1973, Fobes
Preparation for calculus including principal properties of algebraics, exponential, logarithmic and trigonometric functions.

MACMILLAN PUBLISHING COMPANY, INC. (continued)

Mathematics for Liberal Arts Students, 1973, Olive, 9-12
Uses discovery through motivational activity followed by applications, examples, and problems. Covers topics in set theory, statistics and mathematical recreations.

Fundamentals of Mathematics, Fourth Edition, 1973, Richardson
Full year or one-term course. Mathematics is taught as part of human knowledge, culture, and activity.

McGRAW HILL BOOK COMPANY

Elementary Mathematics: Concepts, Properties and Operations, Spitzer, Banks, Burns, Kahes, Folsom, 1-6
Uses strong inductive approach to develop concepts, properties and operations through alternate solutions. Suggests several methods to solve problems.*

Map Skills Transparency Series, K-6
Sequential program to develop an understanding of symbols, models and scales.*

Mathematics: Concepts, Properties, and Operations, Spitzer, Banks, Burns, Kahes, Folsom, 7-8
Uses guided discovery. Grade 7 includes review, relations, functions, and operations on a set of integers. Grade 8 includes subsets of real numbers (whole, natural, and rational numbers), mappings and functions. Prepares the student for algebra.*

Preparatory Mathematics, Yoger, Hirth, 7-9
Develops basic facts through an introduction to algebra and geometry.

Using Mathematics, Third Edition, Henderson, Pingry, 9
Provides skills for solving mathematical problems related to personal and vocational life. Include modern concepts in algebra, geometry and trigonometry and applications of trade mathematics. The text is ungraded.*

Foundation Mathematics, Third Edition, Bartoo, Osborn, St. Jean, 9
Emphasis on basic and business mathematics. Involves slower mathematics students in daily life and work applications.

Algebra: Its Elements and Structure, Books I & II, Second Edition, Banks, Sobel, Walsh, 9-11
Presents significant algebraic concepts. Introduces concepts inductively. Book I involves set concepts, absolute value, inequalities, proofs, and functional notation. Book II includes a functional approach to trigonometry and second year algebra. Discusses linear, quadratic, polynomial, exponential, logarithmic and trigonometric functions, including theory and applications.*

Geometry: Its Elements and Structure, Banks, Posamentier, Bannister, 9-10
For the average student. Inductively develops concepts of analytic geometry, trigonometry, non-Euclidean and vector geometry. Develops concepts in a spiral approach. Supplementary materials available.*

Principles of Mathematics, Third Edition, Allendoerfer, Oakley, 10-12
Precalculus text introduces college mathematics including vectors, matrices, linear algebra and logic.*

Fundamentals of Freshman Mathematics, Third Edition, Allendoerfer, Oakley, 10-12
Introductory algebra course with applications to the social and life sciences.*

McGRAW HILL BOOK COMPANY (continued)

Handbook of Mathematical Tables and Formulas, Fifth Edition, Burington
Includes mathematical reasoning, processes and computations, algebra, trigonometry, analytic geometry, calculus and vector analysis, sets, logic, relations and functions, Boolean algebra, matrices, statistics, etc.

Analytic Geometry, Third Edition, Middlemiss, Marks, Smart, 10-12
This precalculus text includes polynomial and rational fractional functions, exponential, logarithmic and trigonometric functions, vectors and vector methods.

Concepts of Probability, Guenther
Precalculus introductory course in probability with an emphasis on applications.

Mathematics for Data Processing, DeAngelo, Jorgenson, 10-12
A non-rigorous data processing mathematics course that introduces digital computers as a tool for problem-solving. Uses FORTRAN and COBOL.*

Computer Usage/Fundamentals, Weiss, 10-12
Includes computer history, applications, programming, coding, computer industry, systems analysis, and vocational activities in a superficial overview.*

A Prelude to the Calculus, Pownall, 10-12
A precalculus text including concepts and theories of the real number system, functions, and limits. Emphasis on definitions and theorems.*

Introduction to Mathematic Ideas, Crowdis, 10-12
Explores mathematics in other subjects.*

Precalculus Mathematics, Henderson, Usiskin, Zaring, 10-12
Uses mathematical induction to review previous material.

Calculus with Analytic Geometry, Rees, Sparks, 10-12
Covers elementary calculus in a text especially for science and engineering majors.*

Calculus with Analytic Geometry, Durfee, 10-12
Intuitive approach. Assumes a knowledge of the properties of real numbers.*

Contemporary Analytic Geometry, Wade, Taylor, 10-12
Develops plane and solid geometry, and analytic geometry using vectors, graphs of inequalities, and linear programming. Includes an algebra review.*

Algebra and Trigonometry, Second Edition, Rees, Sparks, 10-12
Uses a basically axiomatic approach to prepare the student for analytic geometry and calculus.*

College Algebra, Sixth Edition, Rees, Sparks, 10-12
Employs field axioms in all proofs and procedures. Includes number systems, fundamental operations, fractions, exponents, radicals, equations, and inequalities.*

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Algebra, Trigonometry, Analytic Geometry, Rees, 10-12
Precalculus course.*

Modern Algebra and Trigonometry, Robison, 10-12
Introduces algebra and trigonometry through set theory concepts. Prepares the student for analytic geometry and calculus.*

Plane Trigonometry with Tables, Fourth Edition, Fuller, 10-12
Applies trigonometry to analytic geometry and calculus.*

Sets-Relations-Functions, Second Edition, Selby, Sweet, 10-12
Introduces set theory. Supplements a first year survey of mathematics.

Fundamental Mathematics, Third Edition, Wade, Taylor, 10-12
Uses modern terminology. Includes number systems, operations on numbers, equations and inequalities, trigonometric and graphing functions, probability and statistics, logarithms, interests and annuities.*

Elementary Algebra, Wallace, 10-12
Number theoretic approach to algebra. Includes real number systems, polynomials and polynomial fractions, equations, relations, functions, graphs, and complex numbers.*

Schaum Outline Series
For HS and college level including many fields of mathematics.

The Learning Skills Series: Arithmetic, Hunter, LaFollette, 7-12
Teaches arithmetic skills to satisfy prevocational math requirements for students with low IQ scores. It includes four texts and can be individualized.*

Programmed Math - Series I & II, Sullivan Associates, 1-12
Emphasizes fundamental skills. Verbalization at a minimum. Supplementary materials available.*

Math Laboratory materials available.

CHARLES E. MERRILL PUBLISHING COMPANY

Discovering Mathematics, Cieslinski, K-1
Readiness text-workbook. Introduces basic concepts and instills a desire to explore.

Discovering Mathematics Series, DeVault, Osborn, Swenson, Treuhardt, Forester, Darling, 1-6
Can be used in non-graded systems. Emphasizes teachability and discovery approaches. Proceeds from the specific to the general, then back to the specific for reinforcement.*

Mastering Arithmetic Facts, 1972, Marriot
Cassette tapes coordinated with the student study booklets. Two tapes and five study booklets involving basic arithmetic facts. Good for individual instruction or reinforcement.

Non-graded Math Topic-Texts, 1972, 1-6
Spirit duplicating workbooks correlated with the cassette program.

Magic Squares, 1972, Sharp, Metzner, K-6
To be used with a basic mathematics series.

Merrill Math Skilltapes, Sganga, 4-8
Basic computational skills coordinated with the student study booklets.

Non-graded Math Topic-Texts, 1-6
Spirit duplicating workbooks correlated with the skilltapes. Can be used with any elementary mathematics series.

Ideas from Rock Bottom: From Ideas to Computers, 1972, Nibbelink, 6-9
Humorous narratives and cartoon illustrations present a unique approach to the four basic operations. Cassette tapes.

Discoveries in Modern Mathematics, Second Edition, 1972, Smith, Calder, Mehl, Rasmussen, Steinin, 7-8
Emphasizes student participation and discovery learning. Stresses properties of operations and numbers. Metric and non-metric geometry included in both books.*

Introductory Geometry, 1972, Bassler, Curry, Hall, Mealy
Informal skilltapes program built on open-ended questions that emphasize guided discovery. Students draw and manipulate geometric figures. Students set the learning pace. Supplementary materials available.*

Basic Algebra, Moon, Davis, 8-12
Cassettes coordinated with booklet. Allows for independent study and simultaneous sight and sound presentation. Eighteen cassettes and five books. Most beneficial for students with reading difficulties.*

Discoveries in Essential Mathematics, 1972, Steinem, Ockerbloom, 8-11
Prealgebra text reinforces arithmetic skills and introduces basic concepts of algebra and geometry. Chapters begin with puzzles and games, and students are guided to discovery of concepts with graphing, probability, sets, square and triangular numbers.*

CHARLES E. MERRILL PUBLISHING COMPANY (continued)

Mathematics for Career Education, 1972, Ewen, Nelson, Pickard, Thompson, 9-12
Presents math in a practical manner by applying algebra, geometry, trigonometry and computer math to career oriented problems.*

Algebra One, Vannatta, Goodwin, Crosswhite, 8-12
Emphasizes discovery by relating new concepts to previous math experiences. Stresses the use of properties of a number field and axioms of equality and inequality.*

Algebra Two with Circular Functions, Vannatta, Goodwin, Crosswhite, 10-12
Uses discovery approach and spiral technique to develop concepts. Reviews algebra one and approaches the study of trigonometry. Emphasizes functions, properties of number fields, and axioms of equality and inequality.*

Geometry, Goodwin, Vannatta, Crosswhite, 9-12
Geared to an inductive discovery approach. Uses set language and concepts to stress development of logic and formal proof. Blends coordinate and two and three dimensional geometry.*

Advanced Mathematical Concepts, Vannatta, Crosswhite, 11-12
Precalculus or terminal math cause. Encompasses topics and concepts from intermediate algebra through a study of elementary functions. Emphasizes polynomial and circular functions.*

Merrill Modern Math Workbook Series, 6-9
Individual work to practice, review or evaluate. Spirit duplicating available.

Visual Aids and Tape Recording Equipment available.

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Purpose Puzzles, Long, Cech, 1-6
Developmental, and compatible with most textbooks. Each puzzle has a specific objective.

Let's Play Games in Mathematics, Henderson, K-8
Each game has specific objectives to reinforce or develop concepts. Highly motivational for individual oe small group work. One book is available for each grade.

Math Games for Great Achievement, Henderson
For the underachiever.

Let's Play Games in General Mathematics, Henderson, Glunn, 9-12
Helps to strengthen the learning of fundamental concepts. There are several games and activities for each objective.

The Young Mathematician Workbooks, Mc Cutheon, 6-8
The student independently broadens his mathematical concepts.

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The Random House Mathematics Program, Suppes, Smith, Easterday, Fiel, Carr, Kaplan, Phillips, Bredehorn, K-6
Creates a laboratory atmosphere and develops the study of mathematics through experience. Strong skill development and contemporary content help develop problem solving techniques with respect to reading skills.*

Sets and Numbers, Revised Edition, Suppes, K-6
Stresses concepts, structure, and the logic of mathematics. Duplicating masters are available.*

Sets, Numbers, and Systems, Books 1 & 2, Suppes, Meserve, Sears, 7-8
A step-by-step program where the student learns "by doing".*

Individualized Mathematics: Drill and Practice Kits, Suppes, Jerman, 3-9
Provides drill and practice essential for retaining the basic mathematical skills.*

Visualizing Mathematics, Phillips, K-8
Overhead transparencies and flannelboard kits.

Experiencing Mathematics, Collins, Nanney, Rickey, Gay, 5-9
Five paperbound workbook-format textbooks for students experiencing difficulties with basic arithmetic. Development is spiral and the approach is informal. Each volume covers approximately one semester's work.*

Modern Mathematics, Second Edition, Skeen, Whitmore, 9-11
Covers general mathematics, first-year algebra, and introduces geometry. Uses spiral development, and the review, evaluation, and application technique with an emphasis on operations involving algebraic expressions.*

Using Modern Mathematics; Structure - Applications, 1973, Skeen, 9-11
Specifically for the student who may terminate his mathematics study with this course.*

Algebra One and Algebra Two, Moser, Becker, Phillips, Starr, 8-11
Grasping concepts made easier through tables, illustrations, and graphs. Includes graphing, factoring, and irrational numbers within the framework of the past and future. Overhead transparencies are available.*

Individualized Mathematics: Algebra Skills Kit FF, Moser, Becker, Phillips, Starr, 9-10
Allows individual work to develop and reinforce basic algebraic skills.

Principles of Advanced Mathematics, Revised Edition, 1970, Meserve, Meserve, Pettofrezzo, 9-12
Uses alot of exercises, practice and tests to prepare the pupil for calculus. Includes trigonometric functions, analytic geometry, vectors, matrices, logic, probability, structure of the number system, and the theory of limits.*

RANDOM HOUSE (continued)

Modern Mathematics in the Elementary and Junior High Schools, Second Edition, 1970, Williams, Read, Williams, 9-12
Includes definitions, examples, exercises, summaries, and tests to provide a comprehension of topics in modern mathematics, practice in applying the skills of modern mathematics, and a full preparation in the terminology of modern mathematics.*

A Guide To Modern Mathematics, Herrick, 9-12
Discusses the basic principles fo the "new" mathematics.

New Mathematical Library- The S.M.S.G. Library, 9-12
A paperback collection of supplementary readings. Included are the following 20 books.

Numbers: Rational and Irrational (NML1), Niven
An exposition of number systems.

What is Calculus About?, (NML2), Sawyer
Intuitively develops the basic concepts of mathematics such as speed, acceleration, and volume.

An Introduction to Inequalities (NML3), Beckenbach, Bellman
Includes an axiomatic treatment of inequalities. Provides proofs of classical inequalities and applications.

Geometric Inequalities(NML4), Kazarinoff
Informally presents the arithmetic mean, and geometric mean inequalities. Discusses several principles with an emphasis on problem solving.

The Lore of Large Numbers (NML6), Davis
Develops an understanding of the less obvious properties of numbers.

Uses of Infinity (NML7), Zippin
Develops infinity as a tool essential to all branches of mathematics.

Geometric Transformations (NML8), Yaglom
Develops isometries to solve problems rising familiar geometrical facts.

Continued Fractions (NML9), Olds
Expands fractions to continuous fractions.

Graphs and Their Uses (NML10), Ore

Hungarian Problem Books I & II (NML 11 & 12)
Provides in-depth problems employing simple concepts in a diverse number of elementary mathematical fields.

Episodes from the Early History of Mathematics (NML13), Aaboe

Groups and Their Graphs (NML14), Grossman, Magnus
Introduces group theory. Abstract groups are made more concrete in patterns corresponding to group structure.

RANDOM HOUSE (continued)

The Mathematics of Choice (NML15), Niven
Offers a preparation for a probability study, and stresses combinatorial mathematics, revealing a variety of methods for solving counting problems.

From Pythagoras to Einstein (NML16), Friedrichs
The Pythagorian Theorem and basic facts of geometry are discussed in mathematical and physical contexts.

The MAA Problem Book II (NML17), Salkind
No mathematics beyond intermediate algebra is needed. Uses elementary procedures and sophisticated alternatives.

First Concepts of Topology (NML18), Chinn, Steinrod
Develops topology and simple applications of topology. Includes proofs of the Existence Theorems.

Geometry Revisited (NML19), Coxeter, Greitzer
Introduces transformations, inversive geometry, and projective geometry to elementary geometric concepts. Links many subjects with the branches of geometry.

Invitation to Number Theory (NML20), Ore
Introduces number theory and provides many problems and solutions.

Geometric Transformations II (NML21), Yaglom
Deals with similarity transformations. Includes many problems and solutions.

Elementary Cryptanalysis- A Mathematical Approach (NML22), Sinkov
Introduces cryptography and includes modular arithmetic, linear algebra of two dimensions, combinatorics, and statistics. Other topics are developed as needed to solve decoding problems.

Ingenuity in Mathematics (NML23), Honsberger
Nineteen essays revealing approaches used in thinking about number theory, geometry, logic, combinatorics, and probability.

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Presents basic mathematical concepts and stresses computational skills and problem solving through extended drills and tests.

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A non-graded, workbook-format text requiring a minimum reading ability. Self-directed approach for review, remediation, and basic presentation of basic mathematics for students with reading deficiencies. Presents simple graphic problems and many applications. Duplication masters are available.

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Carefully structured to provide student success with alot of self-help and direct remediation for skill building in elementary mathematics for those with learning difficulties.

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Basal text. Grades 4-6 presuppose a conventional program through grade 3.*

Mathematics for the Elementary School, Special Edition, Books K-1
For the culturally disadvantaged child.*

Developing Mathematics Readiness in Preschool Programs
For the culturally disadvantaged child.*

Probability for the Primary Grades and Probability for the Intermediate Grades and Introduction to Probability, Parts I & II
Spinners are available with the pamphlets.

Secondary School Mathematics, 7-9
Provides an intuitive foundation for high school mathematics. Presents a new curriculum including informal geometry. Assumes the student has has a conventional mathematics (elementary) program.

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Each of the five books requires less than half of a smemster to cover.

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Geometry with Coordinates
An alternative study of geometry.

Analytic Geometry

Algorithms, Computations, and Mathematics
For grade 12. Presents the concepts fundamental to computer science.

Calculus

Calculus of Elementary Functions

Secondary School Advanced Mathematics

S.M.S.G. Library
The books available in the S.M.S.G. library are listed under the Random House Publishing Company.

SCIENCE RESEARCH ASSOCIATES

Greater Cleveland Math Program (G.C.M.P.), Revised, Educational Research Council of America, K-6

Involves teacher directed discovery activity. Includes mastery tests and other supplementary materials.*

New S.R.A. Mathematics Learning System, 1974, De Vault, Greenberg, Frehmeyer, Bezuzka, K-8

Incorporates the latest developments in mathematics education and learning theory. Uses behavioral objectives and an informal approach. Allows for the use of optional multimedia components. Emphasizes the relevance of mathematics to the pupil and his environment.*

S.R.A. Elementary Math Program, S.R.A. Mathematics Department, K-6

Carefully sequenced topics designed to develop, reinforce, expand, and understand mathematical concepts and master skills. Includes story problems and graphic presentations.*

Insight Into School Mathematics, Denholm, Stiel, Blank, 7-8

Sequenced for the average and above average student. Involves much discovery and questions promoting discussion with the emphasis on mathematics as a tool to aid in problem solving.*

Math Structure and Skills, Denholm, Blank, 7-9

Covers the major topics of Junior High School mathematics curricula. Sequenced for the slow learner, the text gradually introduces new ideas through simple vocabulary and a minimum of written instructions..*

Diagnosis; An Instructional Aid, 1972, 1-6

Supplementary testing to pinpoint weaknesses and develop a mastery of skills. Helps individualize learning; students can score their own work.

Mental Computation, Kramer, 2-7

Develops mental computational skills through independent work with word problems, and suggestions for problem solving.

Math Applications Kit, 1971, Friebel, Gingrich, 4-6

Investigates problems using elementary mathematics from 270 activity cards. Through the experiments in science, social studies, sports and games, occupations, and other everyday things, mathematics becomes a tool to understanding and controlling the environment.

Math Involvement Program, 1971, Gladstone, Gladstone, K-6

Concrete and problem solving experiences build and reinforce concepts and skills through 250 activities on seven difficulty levels involving several of the major mathematical areas (numbers, geometry, measurement). Requires a minimal amount of reading.

Computotapes, 1972, 4-8

Worksheets provided with the 112 lessons on 56 cassettes. Involves the four basic operations and decimals and percents.*

SCIENCE RESEARCH ASSOCIATES (continued)

Math Tapes Audiotape Program, Burkhart, 7-9
Correlated with lower and middle track mathematics texts. Includes 60 tapes in eight units.

Arithmetic Fact Kit, Rapp, 3-10
Fact cards develop speed, accuracy, and mastery of basic arithmetic facts. Can be an individual or small group activity.

Cross-Number Puzzle Boxes, Murfin, Bazelon, S.R.A. Mathematics Department, 4-8
The four kits outline independent work in whole numbers, fractions, decimals, percents, and story problems.

Skill Modes in Math, 1973, S.R.A. Mathematics Department, 4-8
Based on learning objectives arranged in difficulty levels, this program helps discover and remedy skill deficiencies in the basic facts.

Kaleidoscope of Skills: Arithmetic, Kramer, 5-7
For the average student, the four books per grade level provide independent work to reinforce computational and reasoning skills.

Computational Skills Development Kit, Proctor, Johnson, 6-10
Exercise cards strengthen skills in basic mathematics.

Algebra Skills Kit, Proctor, Lacey, 8-12
Diagnostic tests strengthen algebraic skills through independent work..

Visual Approach To Math, Masalski, 1-8
A seven volume set of transparencies that include counting, place-value, number properties, geometry, sets and whole numbers, and rational numbers.

Math Supplementary Items, K-3
Includes flannelboards, visual aids, and plastic numbers and symbols.

Equations, Allen, 2-12
Five games that encourage abstract thinking, symbol manipulation, and mathematical logic.

The Laboratory Approach to Math, Kidd, Myers, Cilley
Guides students to set up a complete laboratory to learn through experience at an individual rate of learning.

Today's Mathematics: A Guide to Concepts and Methods in Elementary School Mathematics, Revised, Heddens
Explains concepts, defines terms, and suggests activities within 24 units.

Learning and the Nature of Mathematics, Lamon
Essays on mathematics.

SCOTT, FORESMAN and COMPANY

Basic Mathematics Program, Hartring, Van Engen, Knowles, Gibb, Stochl, Walch, Trimble, Berger, Cleveland, K-6

Seeing Through Arithmetic, 1-6*

Mathematics - Concepts, Applications, 1969, Van Engen, Hartring, Trimble, Berger, Cleveland, Gibb, Stochl, Walch, 7-8

Emphasizes problem solving and includes a strong maintenance and testing program. Visuals contribute to teaching, and several involve review and enrichment.*

Activities in Mathematics (A.I.M.). 1971, Johnson, Hansen, Peterson, Rudnick, Cleveland, Bolster, 7-8

Games, puzzles, exercises, and problems provide concrete experience and active involvement with basic mathematics. Self-correcting tests are included.*

Computer Assisted Mathematics Program, 1967-1969, Johnson, Hatfield, Walther, 7-12

Supplements any mathematics program including algebra and geometry, using the computer to explore mathematical ideas and problems.*

Seeing Through Mathematics, 1967-1968, Van Engen, Hartering, Trimble, Berger, Cleveland, 7-8

Developed for the above average student.*

Mathaids

Includes geoboards, arithmecubes, geoshapes, polyhedron rummy, and arithmetic readiness cards and games.

Mathematics - Concepts, Applications, 1972-1973, Ladd, Kelly, Devlin, Hartman, Robitaille, Trimble, Halberg, 9-11

Aimed at the average student but can be used with slow students by using only the basic problem sets. Uses an intuitive and pictorial approach with a provision for independent work. Chapters are introduced with motivational activities, and chapters end with enrichment activities. Exploratory problems are included. Materials cover algebra, geometry, trigonometry, and probability.*

Fundamental Mathematics Structure Program (F.M.S.), 1965-1967, Van Engen, Hartring, Trimble, Berger, Cleveland, Kelly, Ladd, Halberg, Devlin, Crouch, Beckman, 10-12

Provides solid foundations in mathematics, and includes exercises to reinforce concepts. Includes the following four texts.

F.M.S.: Geometry, 10*

F.M.S.: Elementary Functions, 11*

F.M.S.: Linear Algebra, 12*

F.M.S. : Algebraic Systems , 12*

SCOTT, FORESMAN and COMPANY (continued)

Elements of Modern Algebra, 12
Broad coverage in this full year course.*

A Panorama of Numbers, 1970, Wisner, 7-12
Extends student work with number theory through many exercises.

The Golden Section and Related Curiosa, 1972, Runion, 9-12
Explores geometry and algebraic topics as well as applications in art and nature. Program can be used as a class or as an independent project.

Sequences and Limits, 1972, Gaughan
Deals with the limit concept from problems involving sequences.

Introduction to Computer Science, 1970, 12
Emphasizes FORTRAN and problem solving through the use of FORTRAN.*

Elements of Modern Mathematics - Calculus, 1972, Del Grande, Duff, 12
Includes differential and integral calculus and differential equations.*

Trigmate, 1971
A device that clearly shows the meaning of sine, cosine, tangent, and the other trigonometric functions, and reveals the relationship between the functions.*

SILVER BURDETT

Silver Burdett Mathematics System, 1973, Mc Kellip, K-1
Three booklets for three difficulty levels. Includes a parent involvement page within each book.*

Silver Burdett Mathematics System, 1973, Le Blanc, Vogeli, Scott, Grimsley, Barnhart, 1-6
Silver Burdett Mathematics System, 1973, Le Blanc, Vogeli ,Morodock, Prevost, 7-8
Uses a nonverbal approach to incorporate real world situations to initiate performance objectives, with concentration on skills, and workable problem solving. Includes set numbers and numeration, operations and properties, sentences and problem solving, geometry and measurement, probability, statistics, and graphing, and relations and functions. Supplementary materials include games, kits, practice books, films, and diagnostic tests.*

Modern Mathematics Through Discovery, 1970, Morton, Gray, Rosskopf, Moredock, Collins, Sage, Gilbert, Trafton, Sinard, K-8
Includes practice books, and tests.*